

SPACE DIVERSITY IN BRITAIN

AT a time when the countries of Europe are coming together in space as in other spheres, there seem almost as many separate space-minded departments, groups and establishments in Britain as there are countries in Europe. The main difference is that Britain's constituent elements show few signs of coming together. We might not have any satellites in orbit, the message seems to be, but you should see our committees.

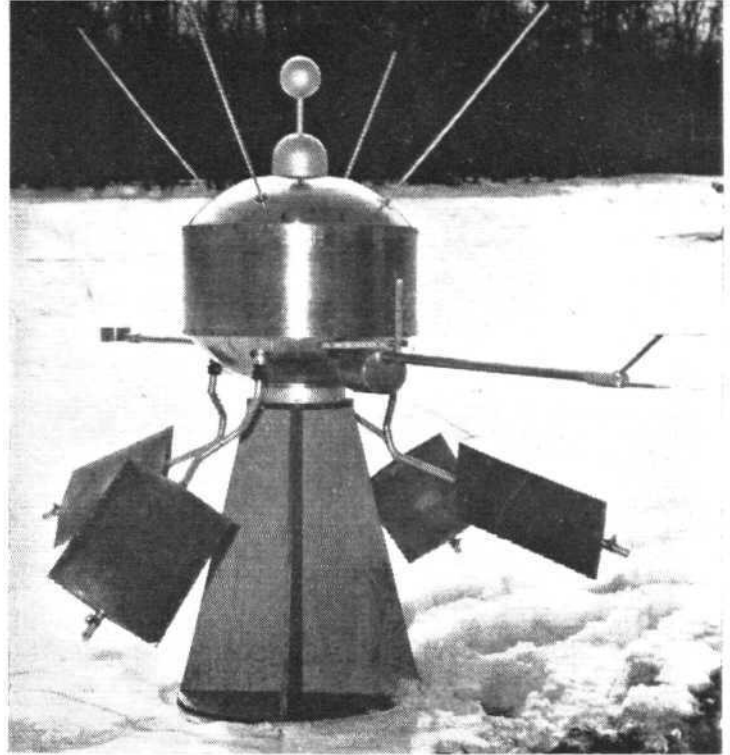
Perhaps the major direct space-research project is the first joint US/UK satellite, ionospheric and cosmic-ray experiments for which have been designed and built by university scientists at Birmingham, Imperial College and University College, London. This opportunity to place British experiments in orbit is the result of a generous offer made by the US National Aeronautics and Space Administration, whose Goddard Space Flight Center is providing the satellite structure, complete with telemetry and power sources. NASA will also provide the Scout four-stage, all-solid launch vehicle, and launch facilities at Wallops Station, Wallops Island, Virginia. It is hoped that these facilities will be used in this connection early next year.

Following the completion of individual test programmes, the first set of British instruments was sent to the USA in June this year. At NASA's Goddard Space Flight Center, Greenbelt, Maryland, the British experiments were integrated into the satellite as a whole, and the complete prototype model is now being subjected to vibration, heat, cold, vacuum and other tests.

Experiments chosen for the second joint satellite were announced last April, and the design of the satellite is now being discussed by teams from both countries. The second satellite is expected to be very similar in layout to the first, as illustrated above.

The British experiments are co-ordinated through the British National Committee on Space Research, which is a committee of the Royal Society with Sir Harrie Massey of UCL as its chairman. Government money for the experiments, however, comes from the Department of Scientific and Industrial Research, which in turn comes under the Office of the Minister for Science, Lord Hailsham. This procedure applies also to a number of other space-oriented investigations by university groups.

The Royal Society is the national body representing Britain in COSPAR, the Committee on Space Research of the International Council of Scientific Unions. In the British national report presented at the recent COSPAR meeting in Florence, the Society explained things this way: "The general 'overseeing' of the scientific content of the whole [British space] programme is the responsibility of the British National Committee on Space Research. This committee reports to the Council of the Royal Society, and advises the Minister for Science through the Space Research Steering Group on scientific aspects."



Mock-up of the first joint US/UK satellite. Five are planned

The Department of Scientific and Industrial Research has its fingers in a number of space pies in addition to the joint satellite. Through its Radio Research Station at Slough, which is steadily expanding its own space interests in many directions, the Department now has responsibility for the new Minitrack tracking station at Winkfield, near Windsor. The main building and equipment for this station, worth some £250,000, were supplied on loan by the US Government, who also provided free a teleprinter link between Winkfield and the Goddard Space Flight Center. Personnel of the Radio Research Station operate the Minitrack facility, which came into use at the beginning of this year.

The main Radio Research Station at Slough is the home of World Data Centre C for rockets and satellites, and also provides this country's official satellite-prediction service.

DSIR has also provided money towards the construction and operation of the large steerable radio telescope at Manchester University's Nuffield Radio Astronomy Laboratories at Jodrell Bank, which has played a significant part in tracking many major satellites and space probes. One recent example of Jodrell Bank's work comprised the joint efforts with Russian scientists to trace possible radio signals from the Soviet Venus probe.

The Guided Weapons Department of the Ministry of Aviation's Royal Aircraft Establishment at Farnborough, also, is deep in the space business, both in connection with the development of the Blue Streak launch vehicle and the design of satellites which might conceivably be launched, and in the observation and analysis of satellite orbits. The Radio Department of RAE includes in its work the operation of a Transit satellite tracking station at Lasham Airfield.

Yet another government department has lately become interested, and involved, in space. The General Post Office has been "studying problems associated with communications satellite systems" and in particular is collaborating with the USA in the Relay and Rebound communications-satellite experiments. A ground radio station is being built on the Lizard, Cornwall, in preparation for satellite tests next year. These tests will cover the transmission of speech, telegraphy and television across the Atlantic.

Private British companies as well as government departments are actively concerned with space affairs. Individual firms have carried out contract work for the Ministry of Aviation, but the main developments over the past year have been the formation of the British Space Development Company, and the collaborative work by Hawker Siddeley Aviation and the French SEREB which led to the formation of the European industrial space study group known as Eurospace. Both organizations now have working groups engaged on specific investigations.

It seems clear that, when Europe really gets into the space business and the air is thick with contracts, there will need to be one national organization or establishment in this country to take all space activity under its wing. Life is hard enough already without competition between the Ministry of Aviation, the GPO and the Office of the Minister for Science; or between the DSIR, the Royal Society, the Government's Steering Group and the universities.

Where might such a civilian space agency or space centre be located? Let us start the ball rolling by suggesting the Royal Aircraft Establishment, Farnborough, with a radio offshoot at the Radio Research Station, Slough.

KENNETH OWEN

Equipment at the new Winkfield Minitrack Station, near Windsor

